# Vendors' Perspectives of Coordination in the Information Technology Offshore Outsourcing Industry: An Exploratory Study from the Philippines


## ABSTRACT

This study investigates how offshore information technology (IT) service providers (vendors) coordinate work with their clients (employers) in order to succeed in the global IT offshore outsourcing industry. We reviewed literature of coordination, interviewed offshore service providers in the Philippines, and used thematic analysis to analyse coordination practices from the point of view of these individual vendors in a newly industrialized country. We analysed the emerging themes and used Olson and Olson's work on 'collaboration at a distance' as a lens to structure the results. The study provides an understanding of vendors' individual attitudes towards the coordination of distributed work and draws attention to how differences in power affect the work situation of vendors, and by implication all stakeholders. We offer this insight as a way to enhance existing CSCW frameworks, by imbuing them with the perspective of non-equal relationships. The study found that vendors are generally able to produce outputs that satisfy their clients, however these results were only achieved because individuals were willing to take risks and make sacrifices in their personal lives.



### Keywords

Coordination, coordination practices, CSCW, information technology outsourcing, virtual team, global software development, ITO vendor.

### ACM Classification Keywords

K.7.1 Occupations, K.6.1: Project and People Management, H.5.3. Group and Organization Interfaces.


## INTRODUCTION

In the age in which technology blurs the boundaries between geographically and temporally dispersed individuals, equal opportunities arise for skilled individuals on a global scale. The Internet through information and communication technology (ICT) is a game changer for developing countries, and in particular for newly industrialized countries that have a highly skilled and trained IT workforce [38]. Service providers or vendors in these countries provide a wide range of IT services to offshore clients commonly situated in developed countries. Organizations, small or large, are taking advantage of ICT to enhance their performance and to leverage expertise across the globe while also cutting operational costs by outsourcing or building virtual teams [22,24,59].

According to Kitchen and McDougall, the widespread adoption of IT has made information technology outsourcing (ITO) a growing multi-billion dollar industry [31]. The emergence of this trend is supported by the Asian Development Bank's outlook on the IT and Business Process Outsourcing industry in Asia, which stresses the need for timely, concentrated efforts to outline strategies, programs and projects to respond to the opportunities and challenges of this industry [38]. Offshore service provision is receiving increased attention and is on the rise despite an understood risk of failure [31]. Organizations set up virtual teams to manage their outsourced activities. These teams consist of geographically and temporally dispersed groups of workers brought together by technology to accomplish organizational tasks often across different time zones and cultural contexts [21,24,27].

Studies of coordination in the context of IT offshore outsourcing have generally focused on the effect and impact on the client, the organization needing the offshore service [1,35,40]. While the ITO industry is most visible through large company clients utilizing the services of offshore vendor teams or companies, it is fuelled by the work of skilled IT practitioners that often act as individual vendors or freelancers. Existing research commonly focuses on virtual teams as a whole [26,50] emphasizing relationship building, trust, communication [11,21,22,54,58] and the effects of ITO at an organizational level [2,24,51]. We propose that there is a noticeable gap in the literature with regards to the role individual vendor play in the ITO process and a lack of understanding how the attitudes and perspective as well as the context under which these interactions take place shape the way collaborative work is conducted in this context. This gap is also apparent in Hätönen and Eriksson's work on outsourcing which

focusses on transactional cost economics [23] as well as Hinds et al's work which asserts the need for a more contextual and dynamic view of culture to shed light on global work [27].

## COORDINATION IN IT OFFSHORE OUTSOURCING

In the next section we first present the contextual details of the study locale. We then present an overview of literature on coordination, followed by the motivations for the methodology used, and describe the method of data collection and analysis in detail. This is followed by the presentation and discussion of the thematic analysis of coordination from the perspective of the vendor.

### IT Outsourcing Industry in newly industrialized countries

So far, India and the Philippines are the two predominant countries in Asia that have established themselves as information technology and business process outsourcing (BPO) industry centres [38]. IT-BPO export earnings continually grew; from USD100 million (2001) to USD1.5 billion (2004) to USD13.5 billion (2012) and are projected to reach USD25 billion in 2016. The industry has become a major generator of job opportunities; it is estimated that by 2016 full-time employment will reach 1.3 million and indirect employment will reach 3.2 million. With a large roster of service-oriented people with English language and other skills, the Philippines has outperformed other Southeast Asian Nations (ASEAN). In 2012 and 2013 significant growth of the industry was expected amongst the country's "next wave" cities [38]. This expectation was surpassed when cities not yet on the "next wave" list [17] outperformed highly urbanized cities such as Baguio City and Iloilo City.

Iligan City, a small city in the southern part of the Philippines in Mindanao, serves as the locale of this study. Iligan City is included in the top 20 Philippine cities with the most number of freelancers and online vendors [18]. Iligan earnings, reported through the online platform Elance-oDesk (now Upwork.com), reached PhP342 million (approximately USD7.8 million), second to Metro Manila (the National Capital Region), between 2010 and 2014 [19,20].

Iligan City is well aware of the challenges brought on by IT outsourcing. Efforts have been made to further create online job opportunities in the rural area by The Department of Science and Technology together with freelancer.com, a well-known Web platform that provides a marketplace for freelancers and clients to meet [39] each other. Newsbyte reports that "According to the National Statistics Coordination Board, as of 2014, 10 of the 16 poorest provinces of the country are in Mindanao. It has an estimated labour force of 10 million with an unemployment rate of 4.5%. In spite of this, Mindanao produces on average 700,000 college graduates a year, who specialize in IT-related fields such as computer science, information technology and engineering [39]." Mindanao State University – Iligan Institute of Technology, one of the country's top universities [12], is one of the major producers of computer science, information technology and engineering graduates in the region.

Our study specifically focuses on ITO vendors from Iligan city who are part of a Global Software Development set-up providing software development services to foreign countries [25].

### Coordination frameworks and theories

Lin et al identified five factors that affect the performance of virtual teams – relationship building, cohesion, trust, communication and coordination [33]. Coordination arises from the efforts of team members to manage collective resources and make their activities logically consistent and coherent. Offshore vendors are a central component of ITO teams, and how these vendors contributes to and coordinates with the overall team is essential to the success of the team as a whole [16].

Various coordination theories and frameworks address the relationship between different actors in collaborative settings. We examine to what extent these approaches can be applied to describe and elucidate dimensions of coordination between offshore ITO clients and vendors.

Malone [36] defined coordination theory as a body of principles about how the activities of separate actors can be coordinated. Common coordination problems addressed in this theory are task division, task assignments, resource allocation and conflict resolution. In coordinating multiple actors, issues arise such as the form of coordination to use, how to boost cooperative behavior, shared visions, alignment of goals, decision-making and knowledge-sharing. Chen et al studied the coordination processes and dynamics of outsourced engineering projects from the client organization's perspective [13]. The study showed that even though the large client has the organizational power the coordination processes are improved when they are shaped between the client and the vendor. The process of offshore ITO requires further investigation into how goals are defined and negotiated between vendors and clients in particular in light of the potential inequalities in status between vendor and clients.

Lee and Paine traced the history of cooperation models in CSCW since Malone's work [26]. They discussed a variety of conceptual frameworks such as those by Grudin, Johansen, Gerson and Strauss [26]. They argued that existing models of groupware and collaboration in CSCW are too technology–centric, or at least that researchers are most likely to adopt this technology-centric aspect of the models overlooking other aspects. They also found existing models too focused on work [32].

A notable body of work that follows a similar sociotechnical approach is that of Olson and Olson [33] and Olson et. al. [44]. These studies encourage CSCW researchers to reflect on the nuances and social dimensions

of remote collaboration and stress that "distance still matters" in (globally) distributed teams. Olson and Olson's work focuses on five key sociotechnical conditions which are considered requisites for effectively conducting work at a distance: **collaboration readiness** (motivation of team members to collaborate), **technology readiness** (the groupware currently adopted by the team with respect to habit, infrastructure, etc.), **common ground** (common knowledge and vocabulary of team members and the awareness of such commonality), **nature and coupling of work**[1] (the dependencies of group work) and **management and decision making** (the challenges of distance, this endeavor requires good and just leadership).

While technology has advanced, many of the fundamental challenges outlined in Olson and Olson's work still remain highly relevant [7]. We thus use their work as a lens, to consider different aspects of remote collaboration while specifically focusing on the perspective of ITO vendors and freelancers with regards to their individual work experience as well as how they manage and perceive collaborative processes.

In addition to the five key concepts, the authors mention three additional factors that are of relevance to our study: time zones, culture and trust [42,44]. Of particular interest is the notion of "power distance" which is mentioned in the broader context of culture. Power distance, as originally introduced by Hofstede, addresses questions regarding the perception and distribution of power and expresses "the extent to which less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally" [29,p.28]. Although postcolonial computing [30] moves away from colonial tropes to offer a more nuanced lens and generative models of emerging cultures and personal histories, the concept of power distance as introduced by Hofstede is still of utility when viewed in a postcolonial light [30].

While Olson and Olson touch upon cultural differences and different notions of "power" in different cultures, they do not address the distribution of power between different stakeholders with different roles (in different countries) in detail. Our study aims to fill this gap by providing additional insight into the distributed collaboration that is conducted between partners with unequal power relationships.

### Coordination in Virtual Teams

Greenberg et al observed that teams go through predictable stages in their process of accomplishing tasks to achieve common goals [22]. They found five distinct stages in the lifecycle of a virtual team: (1) establishing the team which includes choosing members, training, reward structure, (2) inception which includes introduction, team-building exercise, (3) organizing which includes establish their norm of behavior, procedure of task assignment, participation in organizing activities, interaction patterns, (4) transition which includes information exchange, established roles and responsibilities, developing working relationships (5) and accomplishing the task [22].

Since virtual teams are dispersed, it is important to know the nature of the dispersion and where the vendor fits within it. The dimensions that impact the global software development team are (1) geographical dispersion, (2) temporal dispersion, (3) cultural and linguistic dispersion, (4) work and process dispersion and (5) organizational dispersion [34,40,41]. Nguyen-Duc et al's systematic literature review [40] described the coordination challenges brought about by each kind of dispersion that distance work needs to overcome or at least manage.

The study confirms the common perception that geographical dispersion has a negative impact on team performance, temporal dispersion has a negative impact on software quality and that these issues can be addressed by selective, structured communication and collaborative tools [40]. Noll et al suggest that solutions to overcome the effects of dispersion are site visits, synchronous communication technology and knowledge sharing infrastructure [41].

Tang et al investigated teams that work across global time zone difference which revealed strategies and technologies to foster collaboration – synchronous meetings, flexibility in time negotiation, leveraging time zone isolate, tailored collaboration processes, reliance on email and interest in using video. This study focused on the temporal dispersion and resulted into valuable CSCW tool implications [56]. The study results reflect an effective experience of globally distributed teams despite the geographical and temporal dispersion.

Coordination is a situated activity that may depend on the many factors such as the nature of the dispersion of the team, coordination technology set-up, available infrastructure, client's management style etc. Studies of team coordination often lack a description of the context in which coordination mechanisms arise [40]. The emergence of coordination challenges and effectiveness of coordination mechanisms is difficult to observe in either cross sectional studies [40] or in the large by studying an entire team in the ITO industry.

## RESEARCH METHODOLOGY

In order to study how individuals view and understand the concept of coordination in their work, qualitative methods were used. Qualitative methods allow the researcher to delve into the complexity of the problem giving richer and more informative results [53] and information depth rather than breadth [8] by (1) discovering themes and subthemes, (2) deciding which themes are important in the study, (3)

[1] Referred to as "Coupling of work in Olson and Olson [33] and "Nature of work" in Olson et. al. [44]

building hierarchies of themes and (4) linking themes into theoretical models [52]. We used grounded theory techniques to discover and develop themes by drawing upon the approach of Strauss and Corbin [55].

The primary data in this study is qualitative data – interview data of ITO vendors' accounts of their situation in the work relationship. As a means of data analysis, we opted to use thematic analysis as it is a widely used qualitative data analysis method that identifies patterns of meaning across a set of data to answer research questions at hand [10].

The thematic analysis revealed themes that helped us to address four broad research questions (RQ):
**RQ1:** What are the coordination practices of individual vendors?
**RQ2:** What are the issues associated with coordination?
**RQ3:** What are the attitudes of the vendors with respect to their work and coordination set-up?
**RQ4:** How do coordination practices affect vendor attitudes?

The research design of this study was as follows: (1) Preliminary interviews (2) Interviews (3) Thematic analysis (3.1) Open coding analysis, (3.2) Axial coding, (3.3) Selective coding and (4) Presentation of study findings and reflection through the lens of Olson and Olson work on collaboration at a distance [42,44].

#### Preliminary Interviews

We undertook an initial inquiry by conducting exploratory 20 to 30 minutes interview with four vendors conducted in one of the researchers' offices. We inquired about study participant's work practices, their set-up, coordination processes and allowed the interviewees to express themselves and tell stories about their work; notes were taken. These initial interviews gave us a better perspective on the industry and allowed us to improve the interview process for the next data collection phase.

All four interviewees, three BS Information Technology graduates and one BS Computer Science graduate, were all MSU-Iligan Institute of Technology alumni who at the time of the study worked as freelancers or vendors of IT services to offshore companies; they served clients in the United States of America (2), United Kingdom (1) and Australia (1). The four interviews reported similar sets of perceived advantages and problems with regard to their online job. Commonly mentioned advantages were the perceived time flexibility, the monetary power of their salary in a small city province of a developing country, and the satisfaction of knowing their work is used and appreciated in the above mentioned industrialized countries.

The exploratory interview uncovered problems such as problematic Internet connection, scheduled or unprecedented brownouts, agreeing on project schedules, coordinating communication and progress monitoring. However, the interviewed vendors generally felt very satisfied and successful. The preliminary interviews indicated the line of exploration was fruitful and could be extended.

#### Interviews

Qualitative data was collected through semi-structured interviews. In total, eleven vendors participated in the interview sessions which lasted between 33 to 61 minutes each. Interviews were recorded using a voice recorder as well as by taking written notes. The interview guide contained a prepared set of questions. We further allowed the participants to lead the interview to interesting and relevant topics that were not anticipated.

##### *Vendors' Profile*

All the vendors who willingly participated are information technology service providers and are part of a global software development team. The interviews were conducted through meetings in a café, home visits in their work environment and four office visits. There were six males and five females whose ages ranged between 21 to 37 years old. Their educational background is either BS Computer Science or BS Information Technology from the Mindanao State University. With online job experiences which range from three months to eight years, they cater for clients from United States of America (USA), United Kingdom (UK), Australia and Canada. As parts of a development team, the majority of the participants are programmers with some of them also undertaking managerial roles. Table 1 depicts the above information.

| | Gender | Age | Years in Online Job | Work hrs/wk | Work/Position |
|---|---|---|---|---|---|
| V1 | male | 37 | 5 years | 40 | manager, programmer, web scraper |
| V2 | male | 22 | 3 mos. | 48 | Programmer |
| V3 | female | 24 | 5 years | 40 | programmer/ad hoc team leader |
| V4 | male | 35 | 8 years | 40 | Project manager, operations manager, db administrator, sys admin |
| V5 | female | 33 | 10 mos. | 48 | Programmer |
| V6 | female | 21 | 3 years | 48 | Quality assurance / software tester |
| V7 | female | 27 | 15 mos. | flexi | Web developer and administrator, database administrator |
| V8 | male | 21 | 3 years | 40 | iOS developer |
| V9 | male | 30 | 6 years | 40 | Software developer |
| V10 | male | 28 | 5 years | 40 | Programmer/developer |
| V11 | female | 32 | 2 years | 40 | Haskell programmer |

**Table 1. Vendors' Profile**

Eight of these interviewees are home-based while three was housed by their client in a rented office. The home-based participants had set-up a work area in their homes (Figure 1).

**Figure 1. Two vendors' home work area.**

### Analytical Process

Interview recordings were transcribed and coded. In this study, theoretical sampling was used as the analytical process to reveal themes based on Strauss and Corbin's qualitative analysis method [14,55].

Line by line of the interview transcription, the researchers assigned codes by typing in a spreadsheet application. These codes were sorted using the application to reveal concepts. Additional codes were added as open coding analyses were done on succeeding interviews. Constantly comparing one interview over the other allowed the researchers to see commonalities and patterns among the participants of the concepts and these were grouped into categories. The researchers used the old school pen and paper in the axial coding process to discover the link between the themes and categories.

| Code | Concept | Category | Theme |
|---|---|---|---|
| children understand opposite body clock | family situation | unique family/ home setup | Effects on work- life balance. |
| family time weekends | | | |
| distant feeling even if in one house | | | |
| opposite sleeping time with wife | marital situation | | |
| wife demands time | | | |
| increase weight in home-based setup | physical health changes | health issues | |
| developed ulcer | | | |
| different aura with graveyard shift | non-physical changes | | |
| no night life | missed events | limited social life | |
| missed family and friends gatherings | | | |
| no more family talk during dinner time | missed family routine | | |

**Table 2. Sample of coding process**

Table 2 shows a snippet of the coding process to illustrate how a theme (*effects on work-life balance*) was revealed.

The categories group the concepts discovered using axial coding. Through selective coding, these categories were then grouped into themes (illustrated in Figure 2).

## STUDY FINDINGS

We observed a range of phenomena regarding the nature of communication and coordination practices that helped vendors and clients to establish and maintain their work realtionship. The themes that emerged were: (1) *coordination practice adhocracies,* (2) *client relationship,* (3) *online work in practice* and (4) *effects on work-life balance.* The themes and categories are presented in Figure 2. We will the study results and resulting themes through the lens of five sociotechnical dimensions of distance collaboration outlined in Olson and Olson's work.

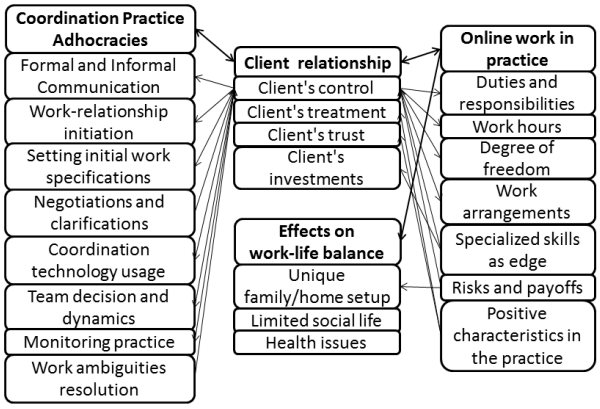


**Figure 2. Themes with their categories (subthemes) and their connections.**

### Nature and coupling of work

The first theme that emerged was ***coordination practice adhocracies.*** The theme reflects the fact that all interviewed vendors utilized very flexible, adaptable and informal coordination practices. All studied vendors, belonged to a distributed software development team and were able to successfully set up and manage their collaborative work environment as they engaged in tightly coupled cooperation with other remote team members. What was particularly notable was the low level of overhead required to set up work relationships. We observed that vendors and clients were adept at initiating and negotiating contracts using simple tools such as email.

Beyond their role in the setup and initiation of work relationships, coordination technologies were vital for the execution of tasks and the orchestration of work between team members. Study participants were required to coordinate work through services like shared repositories and shared code servers (Team Foundation Server / Visual Studio server). The coordination of work around these shared resources was often ad hoc and did not follow a set protocol. Vendors coordinated edits through informal communications or sometimes by making assumptions. *"Luckily currently, only two of us are in this specific project. So we know who made the recent changes. As for*

*coordination with the other team - provide documents this time."*(V3)

The interviewed vendors felt that the ad hoc coordination system they implemented, suited their needs and they did not perceive any specific problems. They attributed this to the fact that they were experienced at flexibly coordinating and solving problems with other team members and conduct their work *"guerrilla style"* (V8). When V8 was asked if he did submit documents as progress report, he answered, *"No not in a document, I just message my boss through chats. Guerilla style, that's how we do things."*

However, while vendor perceived that they had a great deal of flexibility and informality with regards to how they set up coordination tools, they realized that the client ultimately set the deliverables. V5 outlined the process: *"At the start of the week we look at our progress report and tasks ahead. But the report is for compliance. What needs to be done is already innate, but the report helps remind us. We the team understood already."*

### Collaboration Readiness

The study participants were used to engage in tightly coupled tasks and commonly used shared information repositories. In their line of work, where output matters, being ready to collaborate was perceived to be a vital skill.

The interviewed vendors belonged to development teams consisting of 2 to 8 team members, comprising both vendors and clients. Our participants perceived that they were part of a tightly integrated small team. However, they expressed that they are well aware that their client manages more than their own team, and that they are part of a bigger network of teams. The vendors perceived that this abstraction made collaboration and coordination among teams and clients manageable.

### Technology Readiness

Vendors are generally highly trained IT or computer science graduates with experience in the ITO industry. The study participants were all highly adept with regards to recent technological trends.

The communication tools used for client / vendor communication were set by the client. The studied vendors predominantly used instant messaging applications and message managing support, specifically Skype, Google Hangout, Slack.com and HipChat.com to name a few. Chat was the main means of communication to resolve ambiguities and issues in conducting their work. This was followed by email, company email or Gmail, for formal document exchanges or informal lengthy correspondence.

Specialized tools for coordination, as presented in table 3, were underutilized.

| Specialised Tools | Vendor's Usage |
|---|---|
| **PagerDuty** *provides alerting, on-call scheduling, escalation policies and incident tracking, web/availability monitoring, customer support, collaboration, application performance management, API management, infrastructure monitoring* [47]. | For schedules, task and emergency notification. |
| **Team Foundation Server** *is the collaboration platform at the core of Microsoft's application lifecycle management (ALM) solution. TFS supports agile development practices, multiple IDEs and platforms locally or in the cloud and gives you the tools you need to effectively manage software development projects throughout the IT lifecycle* [37]. | For task list, task assignment, task progress and mainly monitor bugs and bug resolution explanation. Constantly check application for updates. |
| **Asana.com** *is a web and mobile application designed to enable teamwork without email. It boasts of the following - "Create tasks for work you plan to do or need a teammate to do. Organize your tasks into shared projects for your initiatives, meetings & lists. Keep conversations with tasks, instead of scattered across email"* [3] to name a few of its features. | Post tasks and task updates. Linked to email. |
| **BaseCamp.com** *is a web-based project-management tool keeps all their project communication in one place, send status reports to the right people, to name of few of its features* [5]. | To manage tasks (see and update tasks) and see who is assigned to a task. |
| **Trello.com** *is a collaboration tool that organizes your projects into boards. In one glance, Trello tells you what's being worked on, who's working on what, and where something is in a process* [57]. | To view task backlogs and new tasks. Through the tool, decides task prioritization before proceeding. |
| **Bitbucket.org** *is a Git and Mercurial based source code management and collaboration solution in the cloud* [6]. | To check issues, user interface modifications and other client specific announcements. |
| **JIRA** *is a proprietary issue tracking product, developed by Atlassian. It provides bug tracking, issue tracking, and project management functions.*[4] | Managing tickets, task assignments. |
| **PivotalTracker.com** *is a collaboration tool that simplifies collaboration and crystalizes priorities to help team focus on what's essential* [48]. | To manage tasks (see and update tasks) and see who is assigned to a task. Still in transition stage from BaseCamp. |

**Table3. Specialised tools provided by clients and their use in practice by the vendor**

Ten of the eleven interviewees were provided with at least one of the above specialized tools by their clients. These tools were mainly used to distribute and monitor tasks, which helped the vendors to be aware of their task assignments. However, despite the fact that these tools were at their disposal, most vendors preferred and used third party communication and messaging tools. One of the vendors opened at least five applications simultaneously to perform her work – Slack.com for teammates and client chat, Skype for the company chat room, Asana.com to check the tasks, Bitbucket.com for client's announcements and finally the development environment where the vendor performed her tasks. Multiple applications were used not only to accomplish tasks but also to facilitate *team decisions and dynamics* and to *resolve work ambiguities*. When ambiguities resulted in miscommunications, vendors were adept at clarifying and repairing misunderstandings through informal written communication. Remote members of the team would use technically mediated informal communication similar to the way that collocated team members used informal conversations. If time in the chat room or a number of email exchanges did not suffice to

achieve clarification, a voice call was used. Video conferencing was not seen as viable since the video and audio is not coherent. Online meetings through video conferencing became a weak one-way conversation. One respondent identified video conferencing as the substitute for face-to-face meetings through use of Skype or GoToMeetings.com, however the virtual meetings' purpose were sometimes defeated due to the city's Internet and electricity problem. Most vendors thus relied on simple written communications.

There is an existing challenge on how improving existing formal and informal coordination strategies can be implemented within current software engineering tools, as a way to improve the coordination in global software development team [49].

One of the biggest problem faced by the interviewed vendors that affected both their career and coordination practices with clients were *infrastructure problems*, in particular problems with unreliable Internet connections and power failures and brownouts. The city commonly experiences frequent and unanticipated brownouts in addition to problems related to limited Internet speeds and reliability. Home-based vendors tried to address the problem by working in Internet cafés that provided more stable electricity and and Internet connections. The worst case scenario was a citywide blackout, which would cause vendors to cease work. Participants reported that this was a major cause of stress especially if problems occured during scheduled task deliveries. If any of these problems occurred vendors had to apologize and explain the reason for the delay. While long term clients were generally aware of this problem it remained a source of embarrassment and stress to vendors.

#### Management and Decision Making

The interviewed vendors perceived that their clients, in their role as employers, were generally doing a good job in managing their teams. The vendors on the whole appreciate their client's monitoring practice and managerial style which generally fosters a good relationship between the involved parties.

*Monitoring practices* among the vendors varied but was always dependent on the clients' preferences. For the home-based vendors interviewed, even if their clients required a certain number of hours of service, their clients were generally more focused on outputs and less concerned about monitoring the actual amount of time worked. For vendors based in an office, the time monitoring was stricter. When some clients suggested more rigid specialized coordination tools similar to oDesk's system with task time monitoring progress, screenshots, keyboard logs and screen activities, the interviewed vendors expressed their opposition and were heard and supported by their clients. These online workers love the degree of freedom given to them by this industry. Rigid project management software like the one built-in in oDesk is seen as defeating the purpose and beauty of choosing online work.

**The *client relationship*** is a vital theme as it determines the practice of the two other major themes – *coordination practice adhocracies* and *online work in practice.* It further, affects *work-life balance.* The *coordination practice adhocracies of the vendors mirrors how clients coordinate with them.* While the outsourcing industry offers freedom, the vendors are very much at their client's behest. This theme reflects the managerial style of the clients.

The initial contact between the interviewees and client is either initiated through a middleman platform (i.e. onlinejobs.ph, oDesk.com, freelancer.com or elance.com) or direct referral. The client decides (*client's control)* to initiate a work relationship, sets work specifications, and negotiates wages. They determine the monitoring mechanisms as well as the conditions mentioned in the theme *online work in practice*. Since it has the most number of connections between themes and categories, *client's control* is considered the core category in our results.

All of the interviewees expressed their appreciation of their good-natured, generous and understanding clients. Six of the eleven interviewees had been working for their current clients without a contract and six of these eleven had been with their clients for at least two years. One client showed concern for the welfare and growth of the vendor by paying for her online training. The clients provided for any work requirements as well as offered perks in a form of bonuses and gadgets. In the long run, some of the interviewees considered their clients to be friends or in some cases even family. The vendors overwhelmingly perceived the *client's treatment* as positive and felt that it was fostered by their own positive attitude and good performance, which the clients appreciated and which also helped vendors to gain the *client's trust*. Four of the study participants were trusted enough that they were tasked to hire and form their own teams. Another vendor was trusted with the client's personal data such as credit card numbers, taxes and other financial matters even though her job description was that of a web developer. Once trust was built, the clients willingly invested in the work relationship by attending to the vendor's needs beyond salary (i.e. hardware needs, software needs, expanding the team, site visits, etc.). Five of the participants appreciated the face-to-face (FTF) encounter they had when their client visited, which enabled them to create a more intimate professional relationship as they continued to work at a distance.

***Online Work in Practice*** – This theme describes the work situation of the vendors in their virtual team, which determines many aspects in their work life. Working conditions were to a large extent influenced by the clients, hence, we consider this theme under the "management and decision making" category. In this study, vendors are mostly programmers who possess high analytical skill. The job title of "Programmer" is highly regarded and coveted by

peers (*specialised skills as edge)*. Programmers are among the highest paid technical workers in the ITO industry, and generally attract a high starting pay.

The *duties and responsibilities, degree of freedom* (with respect to the monitoring mechanism), *work arrangements* (home-based or office-based, full time or part-time) and *work hours* are set by the client. There may be negotiations but the final decision is that of the client. For example, work hours are dependent on their client's base country; for USA clients, vendors worked from 9:00pm to 4:00am and for UK clients, from 4:00pm to midnight. Time zone issues were being addressed by the vendor by adjusting work hours as demanded by the client. Like in Tang's study [56], vendors willingly complied to the time demands set by the client. The schedule was adjusted in the event that daylight savings time was practiced in the client's country. Some clients preferred their vendors to have a home-based setup, whereas others housed their vendors in an office setting. While the interviewed vendors were generally satisfied with the work hours and work location arrangements, they did perceive that the hours "took their toll". In the case of V8, *"Even if I am used to overnight work during college days, I believe night shift makes me 'off' sometimes. Most of the time I can cope, but there are still moments that I wonder how would it be if my work was in the morning."*

**Common Ground**

Common ground was an important concept for both the interviewed vendors and their clients. Vendors and clients both took big risks while engaging a remote work relationship. The clients relied on the vendors' skills to conduct quality work to maximize their profit. The vendors' similarly offered skills, good work ethics and quality output to maintain their professional relationship with clients. This shared interest became the common ground that tied vendors to clients and vice versa.

The study participants took on some risks and in some cases changed their careers in order to work online full-time. One participant, with no career opportunity in the city, took a significant risk and paid for an expensive Internet connection during the year 2000, when Internet connections were not commonly available and expensive. One participant lost his scholarship in his senior year and took a chance to take up online freelancing to support his studies. The risks paid off for both participants as they are now part of a flourishing industry *(risks and payoffs)*. Another risk we identified was leaving an online job middleman platform. Middleman platforms (i.e. freelancer.com or oDesk.com) provide protections to both parties; clients and vendors, through work progress monitoring, output delivery and payment. However IT service vendors, including all of those interviewed, eventually leave these platforms and rely on trusted relationships with existing clients as they continue to negotiate and work outside the platforms. None of the vendors we interviewed worked through a middleman platform and all reported to have established good relationships with their clients.

One of the reasons that such meaningful relationship with the client were built is due to the fact that remote team members' expectations were managed in terms of relationship with remote stakeholders. "Distance tempered expectations of social relationships [23,p.484]", which in turn lead to highly valuing the good-natured clients' offered friendship which they did not expect.

From the vendor's perspective the personal relationship between clients and vendors played an important role in shaping the overall work relationship. For instance, V4 opined: *"The company is informal in nature. Like a family, I can easily talk to the clients. They are very cool."* As stated in the *client relationship* theme, clients and vendors commonly established friendships. This had an impact on the vendor's work practice as vendors felt that they were being treated as equals. This relationship was reinforced when clients financed the interviewed vendors' work needs (e.g. domain server, hardware requirements) and asked them to form and hire their own teams.

The clients gave more opportunities and responsibilities to the vendors as their confidence and trust grows. The vendor's *positive characteristics in practice* (including good ethics, excellent outputs, flexible, adaptable, reputable and trustworthy) directly impacted the *client relationship*. *"He [boss] is very good to me. In return, I do good work, give loyalty, show commitment and honesty. I just do my best."* (V7)

From the vendors' perspective, this thinking had a positive effect on their output. Their clients showed appreciation for their efforts through verbal praise, enthusiasm, the acknowledgment of successful projects and provision of continued employment. As highly specialized skilled workers in the online job industry, these programmers felt that their work ethics and quality of outputs spoke for themselves. Our participants felt that when a client realized the potential of the offshore programmer, that client would continue to work with that specific vendor and even extend the terms of the original agreement, to a larger extent than they would if they considered vendors to be mere subcontracted employee. However, the interviewed vendors realized that the quality of the work output remained the central currency of their relationship with vendors. For instance V9 shared: *"At the end of the day, it is all about the output… They can be generous but they are not stupid. 'I will be good to you, but you are not doing what you are supposed to be doing, then I don't need you.' Some bosses are like that – generous but not stupid*

The vendor-client relationship is a good example of the phenomena of "people working in a concerted and coordinated fashion and yet might have a slightly different, but compatible, goals" as stated in [32,p.183]. Vendors are interested in financial security and job opportunities while

clients are interested in affordable and high quality work outputs.

A notable point of interest in terms of common ground was how V10 and his teammates increased awareness. Unlike other vendors who settled for chat rooms and purposefully designed discussion threads, V10 who is part of a team of five, went above and beyond those established means of communication and decided that all team members were on Skype voice call while they are on duty. *"It's something we just recently tried. Instead of listening to music, we decided to listen to each other work."* Team members were not required to talk, but hearing the presence of other team members gave them a feeling of comfort and shared presence.

### Reflection on themes

The theme titled ***effects on work-life balance*** describes how the vendors' *online work in practice* affected their life beyond work. The interviewees reported that they adjusted their work, family and social life around their work schedule. Although they found this difficult in the beginning, they considered that their schedule has advantages that are beneficial to family life. The home-based vendors were in agreement that their work situation gave them freedom when compared with collocated jobs that run from eight to five. For example, this flexible work arrangement allowed them to accept more than one client. However these vendors, also experience negative issues associated with shift workers like them [15] – disturbance of the sleep/wake cycle, deterioration of health (boredom of their routine, sedentary lifestyle, male home-based vendors had gained weight since starting their job, one developed a mild ulcer and was hospitalized at one point – *health issues*), difficulties in maintaining social relationships (missed out on some family and friend's gatherings – *limited social life*) and difficulties in maintaining family relationships (spouses demanded time, children had to stay quiet in the morning as the vendor slept - *unique home family/home setup*). And the worst effect of the job in the home setup is the distant feeling of the vendor even though they are at home. *"You are home, but it seems that you are not… That's why I devote my weekend to my family and kids. That's the time I can make up to them with my full attention."* (V1)

The interviewed vendors juggled, performed and produced the output on schedule. They kept their clients satisfied with hard-work, discipline, flexibility, good personal relationship skill, good communication and very satisfactory outputs and expressed pride in doing so.

## DISCUSSION

This study aimed to understand coordination of distributed software development from the ITO vendor's perspective, using thematic analysis. To answer RQ1 (What are the coordination practices of individual vendors?), the principal finding was that vendors use very flexible, adaptable and informal coordination practices and simple reliable technologies. Coordination is central to the vendor's work, but is often not thought of as a separate activity. Vendor's are flexible with regards to which coordination technology is used and whether it is synchronous or asynchronous in nature. Even if there is delay in response, basic technologies such as email and chat are sufficient to resolve ambiguities in managing shared resources, schedules, tasks and decisions. Voice calls are an alternative to chat and email, though this technology is rarely used due to Internet reliability problems within the city. Vendors appreciate meeting their clients face-to-face, but such meetings generally only take place once a relationship has been fully established.

The study revealed that more sophisticated coordination technologies such as project management software are underutilized by ITO vendors. These coordination technologies could support the majority of coordination processes, but in the context of our study were only used to access assigned tasks and tasks schedules. These results are reflected in other studies that looked at coordination practices in distributed software development more broadly. Boden [9] described how companies involved in distributed development did not use specialized coordination and communication, but instead used chat or voice calls because they were more flexible and easy to use. However, in the context of our study was not purely driven by convenience or efficiency but reflected attitudes regarding the distribution of power and control. Vendors felt that these advanced technologies added an element of control and monitoring that belied that trust that had developed with their clients and reduced they level of control and informality that was central to their coordination practices.

Literature on the dispersion of global software teams has highlighted how dispersion can have a negative impact on the team's output and performance as a whole [34,40,41,46]. Given the well-established challenges associated with remote collaboration we were surprised to find that the vendors we studied reported relatively few coordination issues (RQ2: What are the issues associated with coordination?). Vendors did report that there was an initial adjustment period, especially with regards to their family life, social life and health, but generally felt that they were coping with the conditions of work. Their work hours were dictated by the office hours in the client's country, but vendors felt that improved information and communication technology allowed them to overcome these challenges. Participants did not consider cultural differences to be an issue, in particular because there was no significant language barrier, as many Filipinos on average have excellent English language skills [38]. Vendors felt that their language proficiency helped them to resolve communication and coordination issues with clients. When there were differences in software development culture or organizational behaviour, vendors commonly followed the lead of their clients, but made suggestions about particular aspects of the work routine and eventually came to an

agreement. Similar to other coordination work, these types of negotiations were conducted through chats, emails, voice calls or video calls.

With regards to RQ3 (What are the attitudes of the vendors with respect to their work and coordination set-up?), while the vendors' work setup is substantially driven by client demands regarding work hours, location, and interaction and coordination approaches, vendors generally are very appreciative and satisfied with their profession. They perceived that they were able to develop professionally and establish good relationship with their clients. Pride in their in their work and gratitude towards their employer played a critical role in this context. Vendors reported that they frequently delivered outputs beyond their client's expectations. The following statement from Vendor 10 is indicative of this attitude: "*Given a module specification, we always try to deliver something even better, to our client's amazement.*" The interviewed vendors their place in the ITO industry and display a professional work ethic. The interviewed vendors were proud of their success which brings along benefits such as the purchasing power that their pay affords them in the provincial part of the Philippines. Overall, client satisfaction is seen as the central indicator of success and vendors are appreciative of the relationships they establish with clients and the recognition they receive for their work. As a result, they are wary of other ITO vendors who sell their services cheaply, and threaten the financial viability of their profession.

With regards to RQ4 (How do coordination practices affect vendor attitudes?) the study revealed that being able to influence the coordination workflow (*coordination practice adhocracies*) was a critical point for vendors. Vendors felt that the flexibility to conduct and coordinate their work in a flexible manner gave them a degree of freedom that made them feel trusted, valued and counted on. As a result, this feeling of work satisfaction led to improved work practices and client relationship.

The complex relationship between the *client's control* of the overall work arrangements and the vendors expressed desire to flexibly arrange their coordination tools was reflected in other identified themes, namely *coordination practice adhocracies* and *online work in practice*, are largely within the client's control.

In some regards our results align with Hofstede's cultural dimension theory, which describes the correlation between a society's culture and the values of its' members [29]. One of the central cultural dimensions is power distance, "(…) the extent to which the less powerful members of organizations and institutions (…) accept and expect that power is distributed unequally."[29,p.28]. The Power Distance Index (PDI) quantifies this cultural dimension [28]. The Philippines scores a PDI of 94 – a high number which represents a large power distance. By comparison, the PDI scores of the clients' countries considered in our study are significantly lower: Australia (36), Canada (39), United States of America (40) and UK (35). The gratitude and vendors feel with regards to their clients could be explained with the fact that the client's management behavior defies expected norms with regards to the distribution of power within the Philippines. However, overall our results point to a more complex relationship. Venders generally appreciative and are aware of the privileged position that their jobs affords them within the Pilipino society. However, they only value this as long as they perceive to be trusted and appreciated by their clients. They accepts difficult working conditions, such as working outside of regular office hours and the impact this has on their family and health as long as they are given a degree of autonomy when it comes to the choice and manner in which they conduct their work, and in particular how they coordinate their work informally.

## CONCLUSION

This study aimed to add a new perspective to coordination studies by considering coordination practices from the perspective of offshore contractors / vendors in newly industrialized countries. As this is an exploratory study, we do not claim that the study result are generalizable, but instead aim to provide deeper insights into the role of offshore vendors which is rarely considered,.

Our thematic analysis of the interview data revealed a set of themes and categories that reflect different facets of vendors' working conditions, coordination practices and attitudes towards collaboration. C*lient relationship* emerged as a critical theme in our analysis. The *client relationship* determines how *online work is conducted in practice* (which in turn influences *the effects on work-life balance)* and *coordination practice adhocracies*. Clients and vendors have a mutually beneficial relationship. Values like respect, trust, appreciation or even friendship were central prerequisites to a functional working relationship from the vendors' perspective.

This theme is directly linked to both *online work in practice* and *coordination practice adhocracies.* The latter theme summarises results regarding the vendors' coordination mechanisms and practices. Coordination technology plays a vital role in the vendors' coordination practice. An offshore vendor has no choice but to rely on available technology for sharing resources, communication, problem solving, building relationships, task schedules and task accomplishments. Vendors preferred simple coordination tools (e.g. instant messenger, email, voice and video call) that afforded them a degree of flexibility and informality with regards to their coordination practice. Specialized tools were used for specific aspects of the work routine , such as task assignment and monitoring purposes. The vendors we studied had established a good reputation and gained their clients' trust. However, more intrusive monitoring tools were generally not appreciated by vendors. Vendors felt that these tools, defeated one of the reasons they chose their

profession in the first place, the fact that their online job offered them a degree of freedom.

Literature on the role of coordination in dispersed teams, highlights how distance introduces significant challenges [7,34,40,41,42,43]. In this study, we found that vendors were able to accommodate various dispersion challenges, such as differences in time zone, by changing their working hours and making other personal sacrifices. Despite this the study showed that vendors were overall comfortable and satisfied with their work conditions.

It has been established that clients generally benefit from a better inclusion of vendors and contractors in communication and coordination processes [13]. Based on our finding we believe that addressing inclusion in the ITO industry requires a better understanding and management of power imbalances and the acknowledgment that power is a critical dimension of analysis in distance work. We hope that our work offers a new perspective on distributed collaboration across different cultural and economical contexts and can help to develop strategies to further integrate ITO service vendors into the coordination process.


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